

Claims

5        1.        A connector, comprising:  
conductors; and  
a housing containing the conductors configured with an opening on at least one side  
other than the front connecting face for promoting air flow across the conductors in the  
housing.

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2.        A connector according to claim 1 including fins coupled to the conductors and  
extending out of the housing opening.

15        3.        A connector according to claim 1 including openings on opposite sides of the  
housing for passing air through a first one of the openings, over the conductors, and out a  
second one of the openings.

20        4.        A connector according to claim 1 including an air flow control device  
configured to direct air into the housing opening.

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5.        A connector according to claim 4 wherein the air flow device includes an air  
intake vent configured to direct air from underneath a circuit board up through circuit board  
vias and into the housing opening.

25        6.        A connector according to claim 4 including an exhaust vent that directs air out  
of the air flow control device.

5        7. A connector according to claim 4 wherein the air flow control device includes  
a shroud covering the connector.

10        8. A connector according to claim 7 including an exhaust vent configured to vent  
air out of the shroud.

15        9. A connector according to claim 4 including vias connected to a power plane  
on a printed circuit board, the vias located inside the air flow control device for directing air  
from underneath the circuit board up through the vias and across the conductors in the  
connector.

20        10. A heat removal system, comprising:  
a device configured to attach over a circuit board power connector and including an  
output vent for directing heat away from the power connector.

25        11. A heat removal system according to claim 10 including an air intake vent  
located on an underside of the printed circuit board for directing air up through holes in the  
printed circuit board and into the device.

12. A heat removal system according to claim 11 including a hinge that couples  
the device with the air intake vent.

25        13. A heat removal system according to claim 11 wherein the holes are electrically  
coupled to a power plane on the printed circuit board.

14. A heat removal system according to claim 10 including openings in a power connector housing, the device directing air flow into a first one of the openings, over conductors in the connector, out a second one of the openings, and out the output vent.

10 15. A heat removal system according to claim 14 including fins on the conductors extending out of the housing openings.

16. A heat removal system according to claim 10 including a fan located next to the air exhaust for sucking air out of the output vent.

17. An air flow control device, comprising:  
a unit for containing a circuit board power connector;  
an air intake vent for directing air into the unit; and  
an air outtake vent for directing air out of the unit.

18. An air flow control device according to claim 18 including openings on opposite sides of the power connector.

19. An air flow control device according to claim 18 including heat sink fins  
25 thermally coupled to conductors in the power connector and extending out of the openings.

5           20. An air flow control device according to claim 19 including circuit board vias  
located inside the unit and coupled to a circuit board power plane.